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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/530,310	09/27/2000	Rene Jepsen	CE30382 P	5409

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EXAMINER

HOANG, THAI D

ART UNIT PAPER NUMBER

2667

DATE MAILED: 11/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary****Application No.**

09/530,310

**Applicant(s)**

JEPSEN ET AL.

**Examiner**

Thai D Hoang

**Art Unit**

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-11 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4,6, 8 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent, US Patent No. 5,539,730 in view of Ottersten et al., US Patent No. 5,828,658, hereafter referred to as Dent and Ottersten respectively.

Regarding claims 1 and 11, Dent discloses a method and system for TDMA/FDMA/CDMA hybrid radio access. Dent teaches that the system comprises a hub base station 400 and a plurality of mobile users 420 (figs. 9-11), wherein the base station communicates with a first and second mobile stations simultaneously by using TDM in a downlink direction and FDMA or CDMA in an uplink direction (means for transmitting between the first central station and a first remote unit in a first portion of the frequency spectrum in a first direction using a first transmission scheme; means for transmitting simultaneously between the first central station and a second remote unit in the first portion of the frequency spectrum in a second direction using a second transmission scheme). Dent does not explicitly disclose that the uplink and downlink signal have overlapping frequency spectra. However, Ottersten discloses a system called "Spectrally efficient high capacity wireless communication systems." Ottersten discloses the system uses the same frequency spectrum for both uplink and downlink,

col. 37, lines 56-67; col. 39, lines 4-15. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the same frequency spectrum for both uplink and downlink as disclosed by Ottersten into Dent's system in order to save the bandwidth of the system.

Regarding claims 2-4 and 8, as best understood, Dent discloses that the system could be able to operate in a CDMA method for uplink and TDMA for the downlink; col. 5, lines 60 – col. 6, lines 26 (first transmission scheme using spread energy signals and said second transmission scheme using concentrated energy signals; and first transmission scheme using a substantially time continuous signal with low power variation, and said second transmission scheme using a time discontinuous signal with high peak power during transmission bursts.)

Regarding claim 6, Dent teaches that the system uses DFMA/CDMA scheme in the uplink and TDMA scheme in the downlink; col. 1, lines 55-59; col. 5, lines 39-40; col. 5, line 60-col. 6, line 1. Therefore it indicates that the base station uses different frequency for each mobile unit in each direction; see figs. 2-5 (a second portion (201) of said frequency spectrum being dedicated to communication in said first direction and a third portion, (206) of said frequency spectrum being dedicated to communication in said second direction)

Regarding claim 10, as best understood, since Dent's system could be able operated in TDMA/FDMA/CDMA hybrid scheme, therefore, it is inherently comprised a means for removing narrowband signals (TDMA or FDMA) when receiving the broadband signals (CDMA); see figs. 2-5, 7-8.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dent, US Patent No. 5,539,730 in view of Thielecke et al., US Patent No. 5,719,899, hereafter referred to as Dent and Thielecke respectively.

Regarding claim 5, Dent does not disclose that the system uses CDMA scheme for uplink and OFDMA scheme for downlink. However, Thielecke discloses a multiple access digital transmission system, which uses FDMA scheme in the downlink and CDMA scheme in the uplink; col. 4, lines 56-59. OFDMA scheme is well known in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply OFDMA in stead of FDMA scheme in the downlink as disclosed by Thielecke in order to improve quality of service because the interference of the signal is reduced.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dent, US Patent No. 5,539,730 in view of Hunsinger et al., US Patent No. 5,949,813, hereafter referred to as Dent and Hunsinger respectively.

Regarding claim 9, as best understood, since Dent's system could be able operated in TDMA/FDMA/CDMA hybrid scheme; therefore, the power of the broadband signals in the system is inherently uneven because of interference between a strong power signals (narrowband signals) and a low power signals (broadband signals). However, in order to show clearly, Hunsinger discloses a method and system for simultaneously broadcasting and receiving digital and analog signals. Hunsinger teaches that the interference between narrowband signals and broadband signals creates unevenly broadband signal; see figs. 6a-b, col. 9, lines 13-17.

***Allowable Subject Matter***

Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicant's arguments with respect to claims 1 and 11 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai D Hoang whose telephone number is (571) 272-3184. The examiner can normally be reached on Monday-Friday 10:00am-18:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thai Hoang

  
CHI PHAM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER  
11/22/07